

REMARKS

Status of Claims:

Claims 1, 6-11, and 16-24 were pending in the application. Claims 20-24 were previously withdrawn from consideration. Claims 1, 6-11, and 16-19 stand rejected. Accordingly, claims 1 and 11 have been amended. Accordingly, claims 1, 6-11, and 16-19 are presently pending. Reconsideration and allowance of claims 1, 6-11, and 16-19 is respectfully requested.

Claim Rejections:

Claims 1, 6-11, and 16-19 were rejected under 35 USC 102(b) as being anticipated by Yuan et al., US Patent No. 5,705,973, hereinafter *Yuan*. Independent claims 1 and 11 have been amended and are believed to be in condition for allowance. Allowance of claims 1 and 11 and their respective dependent claims, 6-10 and 16-19 is requested.

Rejection of the claims 1, 6-11, and 16-19 is respectfully traversed because, for at least the following reasons, *Yuan* does not show or suggest all of the claimed limitations.

According to MPEP §2131,

'[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.' (*Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)). 'The identical invention must be shown in as complete detail as is contained in the ... claim.' (*Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989)). The elements must be arranged as required by the claim, but this is not an ipsissimis verbis test, *i.e.*, identity of terminology is not required. (*In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990)).

Independent claim 1 requires, in part an apparatus that comprises a multilayer structure that comprises a free layer; an antiferromagnetic layer between a pinned layer and a pinned keeper layer, the pinned layer and a pinned keeper layer neighboring the antiferromagnetic layer, the antiferromagnetic layer having exchange anisotropy that helps pin the magnetization direction of the pinned layer and helps pin the magnetization direction of the pinned keeper layer, the magnetization direction of the pinned layer is antiparallel to the magnetization direction of the pinned keeper layer, a nonmagnetic spacer layer between the pinned layer and the antiferromagnetic layer, the spacer layer separating the pinned layer and the antiferromagnetic layer so that the pinned layer promotes a GMR effect within the free layer, wherein the pinned layer produces first pole densities and a resulting first magnetic field within the free layer that are approximately canceled by second pole densities and a second magnetic field produced by the pinned keeper layer to substantially remove any undesired bias on the free layer resulting in a magnetization direction of the free layer that exhibits a balanced swing with respect to flux that emanates from or terminates upon a disk surface. Independent claim 11 has similar limitations.

Yuan discloses a balanced, symmetric dual spin valve sensor with symmetric placement of two biasing layers. In FIG. 3, of *Yuan*, reference numeral 26 designates a free FM layer separated from pinned FM layers 29, 31 by spacer layers 27, 28. The directions of magnetization of pinned layers 29, 31 are the same, as shown by arrows 29a, 31a. Exchange coupling AFM layers 32, 33 are located adjacent to pinned FM layers 29, 31 respectively. Magnetic biasing layers 34, 36 are provided in accordance with this invention on each side of AFM layers 32, 33 respectively.

Distinguishable, Applicant's independent claims 1 and 11 require that the magnetization direction of the pinned layer is *antiparallel* to the magnetization direction of the pinned keeper layer, so that the first pole densities and first magnetic field produced by the pinned layer are approximately canceled by second pole densities and a second magnetic field produced by the pinned keeper layer to substantially remove any

undesired bias on the free layer. This results in a magnetization direction of the free layer that *exhibits a balanced swing with respect to flux* that emanates from or terminates upon a disk surface. Thus, Applicant's apparatus that comprises a multilayer structure where the magnetization direction of the pinned layer *is antiparallel* to the magnetization direction of the pinned keeper layer, to substantially remove any undesired bias on the free layer, which results in a magnetization direction of the free layer that exhibits a balanced swing with respect to flux that emanates from or terminates upon a disk surface is not taught, disclosed, or suggested by *Yuan*.

Therefore, since *Yuan* does not teach, disclose or suggest all of Applicant's claims 1 and 11 limitations. Thus, Applicant's claims 1 and 11 are not anticipated by *Yuan*. Additionally, the claims that directly or indirectly depend on claims 1 and 11, namely claims 6-10, and 16-19, respectively, are also not anticipated by *Yuan* for at least the same reason.

In the event a telephone conversation would expedite the prosecution of this application, the Examiner may reach the undersigned at (408) 927-3387. For payment of any additional fees due in connection with the filing of this paper, the Commissioner is authorized to charge such fees to Deposit Account No. 09-0466 (Order No. SJO919990038US2).

Respectfully submitted,

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